FEMA

School Continues to Serve as a "Beacon of Hope"

Jefferson County, Texas

Sabine Pass, TX - On the morning of September 13, 2008, Hurricane Ike tore into Sabine Pass, located on the upper Texas Gulf Coast. The storm destroyed many of the town's buildings, but one structure, the Sabine Pass School with its "Beacon of Hope" lighthouse, escaped seemingly unscathed. This achievement didn't happen overnight. Knowing the school was the focal point of the community, school officials began planning in 1998 to safeguard it. People used the school for holiday celebrations and many other community activities. Residents were loyal to the school, and so a bond measure was easily passed to help with the costs associated with building a new 57,644-square-foot structure that would be stronger and safer than the original school building.

The school's former superintendent, Dr. Tom Harvey, and other officials wanted to design a structure that could withstand a Category 4 hurricane. They wanted the building to be a reflection of Sabine Pass School and the community. They also wanted a structure that would be a model for other schools along the coast. School officials chose an architectural firm to design and oversee the construction that was knowledgeable in successful coastal mitigation techniques and building and wind code requirements established by the Texas Department of Insurance.

To resist the hurricane force winds, architects designed a flat roof with three layers of protection. These layers begin with corrugated metal decking followed by the placement of rigid insulation, topped off by a rubber membrane. Impact-resistant windows were made of 9/16-inch laminated safety glass.

Meanwhile, strengthening the elevated foundation became one of the main design missions suggested by the architectural firm. "It's amazing what had to be done prior to the actual elevation of the structure," said Malcolm Nash, Sabine Pass School's current superintendent. One of the strengthening techniques was the use of structural elements called auger cast piles, which support the footings and columns of the school's open foundation. Contractors drilled holes 72 feet deep; as the drill came out, concrete was injected into the holes. While the concrete was wet, rebar was inserted as the final reinforcing element. Beneath the school building are 360 auger casts piles, each six to eight inches wide, with two to five auger casts supporting each column that the school sits on. To complete the strengthening process are footings above all of the auger cast piles that hold the columns. Nash said the underground mitigation steps were "crucial to the fortification of elevating the school" and ultimately helped protect it from the powerful forces of both hurricanes Rita (2005) and Ike.

Quick Facts

Year:
1998

Sector:
Public/Private Partnership

Cost:
Amount Not Available

Primary Activity/Project:
Elevation, Structural

Primary Funding:
Local Sources